



(43) International Publication Date
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number
WO 2005/063125 A1

- (51) **International Patent Classification⁷:** **A61B 8/08**,
6/12, 19/00

(21) **International Application Number:**
PCT/IB2004/004225

(22) **International Filing Date:**
17 December 2004 (17.12.2004)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
03300279.1 22 December 2003 (22.12.2003) EP
04300157.7 22 March 2004 (22.03.2004) EP

(71) **Applicant (for all designated States except US):** **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) **Inventors; and**
(75) **Inventors/Applicants (for US only):** **GERARD, Olivier** [FR/FR]; Société Civile SPID, 156 Boulevard Haussmann, F-75008 Paris (FR). **FLORENT, Raoul** [FR/FR]; Société

Civile SPID, 156 Boulevard Haussmann, F-75008 PARIS (FR). **GIJSBERS, Geert** [NL/FR]; Société Civile SPID, 156 Boulevard Haussmann, F-75008 PARIS (FR).

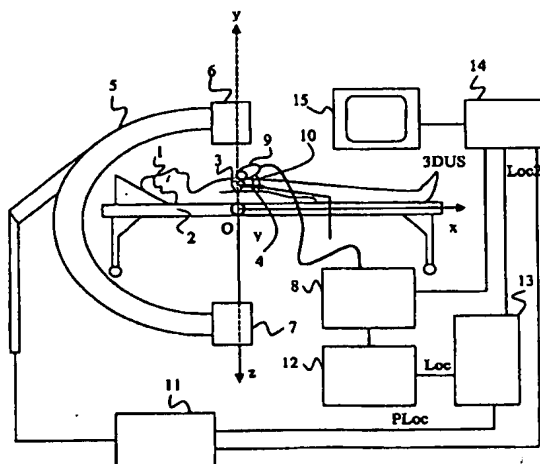
(74) **Agent:** **LANDOUSY, Christian**; Société Civile SPID, 156 Boulevard Haussmann, F-75008 Paris (FR).

(81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEM FOR GUIDING A MEDICAL INSTRUMENT IN A PATIENT BODY



(57) Abstract: The present invention relates to a medical system comprising a medical instrument to be guided in a patient body, means for acquiring a 2D X-ray image of said medical instrument, means for acquiring a 3D ultrasound data set of said medical instrument using an ultrasound probe, means for localizing said ultrasound probe in a referential of said X-ray acquisition means, means for selecting a region of interest around said medical instrument within the 3D ultrasound data set, that define a first localization of said region of interest in a referential of the ultrasound acquisition means, means for converting said first localization into a second localization in said referential of the X-ray acquisition means and means for generating a bimodal representation of said medical instrument detection by combining said 2D X-ray image and the 3D ultrasound data included in said region of interest.

WO 2005/063125 A1